IN REPLY REFER TO

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
MEDICINE LAKE NATIONAL WILDLIFE REFUGE

1952

WATER MANAGEMENT PLAN

GENERAL

During most of the year of 1951, precipitation in this area was rather light, especially during the early summer. As a result pool levels dropped considerably from the 1950 marks. This was most noticeable in the Homestead area where the excessive evaporation lowered the shallow Homestead Lake to a point 1.85' below the crest of the spillway, or .9' below the 1950 fall reading.

Following the recommendation of Mr. Salyer, Medicine Lake was held approximately one foot lower than during 1950, in an effort to improve shore line conditions.

Precipitation has also been light during the fall and winter months, but since the amount of run-off water is usually determined by spring conditions, it is now too early to make any mention of anticipated water flows during 1952.

Recommended water levels for 1952 are shown in the following table:

Unit	Spill Level	Present Elevation	Proposed Max. 1952 Levels
Katy's Lake	No Spillway	Below Gauge	1953.00
No.4 (Medicine Lake)	1943.02	1941.70	1942.00
No. 6 (Homestead)	1937.85	1935.80	1937.85
No.10	1945.50	1943.30	1945.50
No.11	1952.54	1951.10	1952.54
No.12	1955.93	1952.70	1954.00

DETAILS

KATY'S LAKE

Encouraged by the elimination of botulism from Katy's Lake during the past four years, it is planned to again divert as much water as possible from this area, and to avoid higher levels than 1953', if at all possible. It has been found that this amount of water can be safely stored in the spring and will usually be low enough to be uninviting to waterfowl during the danger months.

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NO. 4 UNIT (Medicine Lake)

During 1951 an attempt was made to hold water levels in Medicine Lake at least a foot below the spillway level of 1943 feet. Apparently alarmed by the scanty rainfall of early summer the former Refuge Manager kept the water up to 1942.60 during July. After my arrival levels dropped to 1941.90 in September, 1941.75 in October and 1941.70 in November at freezeup.

This did not permit much of a chance to test the effectiveness of a lowered surface level suggested by Mr. Salyer for increasing the shoreline growth of vegetation.

It is proposed to attempt holding the levels at a slightly lower stage this year, to give this plan a chance to prove its value, and also to maintain a better level in Homestead Lake by releasing more water into Muddy Creek from Medicine Lake. From the 1951 figures it is evident that Medicine Lake can be safely held at a slightly lower level without exposing the mud flats at the upper end of the lake. We therefore propose a maximum height of 1942', with slightly lower levels during most of the summer.

It possible that turbidity of the water in this lake may have some effect on emergent vegetation, particularly in its early growth stages. This condition may be aggravated by the large carp population. It is hoped that this over-population can be reduced this year. However, a body of water of the size of this lake, with its low banks, can develop a strong, scouring wave action with the amount of wind usually found here, and can create a condition somewhat unfavorable to shore line growth.

NO.6 UNIT (Homestead Lake)

The weakened condition of the Homestead Lake spillway last spring probably was a deciding factor in deciding against much of a filling in early summer. A leak at the intake gate which could not be repaired without releasing most of the water in the lake also allowed levels to drop to an undesirably low level after midsummer.

A considerable amount of repair work was done on the spillway and intake gate late in the fall and it is believed that it will be possible to maintain this lake at near the 1938' spill level through most of the summer.

Possibly the low stage of the 1951 fall months may promote some rush growth, and its effect will be closely watched.

If the placing of several hundred yards of w ater-puddled

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earth fill at the old spillway does not relieve the long-standing source of trouble, it will be necessary to plan the construction of a new spillway. A very favorable site is offered, that will permit the construction of a spillway with flash-boards that will be far better than the present installation.

NO. 10 Unit

The No. 10 Unit is well adapted to permit thorough flushing during spring run-off, thus allowing retention of good fresh water through the summer. It is proposed to maintain a level as near the 1945.50' spillway level as possible during the coming year.

NO. 11 Unit

This is one of the best waterfowl nesting and brooding areas of this refuge and has a splendid growth of bulrushes and other desirable plants along its shore line and on the islands. It is fairly easy to maintain the water level since it is well protected from winds and consequent evaporation losses. Levels can be raised whenever necessary by opening the No.12 gate and it is our proposal to follow the usual custom of keeping this unit filled to the spillway level of 1952 feet.

NO. 12 Unit

This is the upper unit of the refuge and is fed by Lake Creek The rather high banks permit storage of water for later release into the lower units without much change in shore lines.

It is proposed to hold this unit as nearly as possible at the 1954 foot level which has been found quite practical and favorable during recent years.

Submitted January 3, 1952

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